

**Air Pollution Control District
Jefferson County, Ky
19 January 2003**

TITLE V PERMIT SUMMARY

Company: Louisville Gas & Electric Company, Mill Creek Generating Station

Plant Location: 14660 Dixie Highway, Louisville Kentucky 40272

Date App. Received: 21 February 1997

Date Admin. Complete: 18 April 1997

Date of Draft Permit: 17 December 2000

Date of Proposed Permit:

District Engineer: John McCarthy

Permit No.: 145-97-TV

Plant ID: 0127

SIC Code: 4911

NAICS: 221112

AFS: 00127

Introduction:

This permit will be issued pursuant to: (1) District Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as of the date above as an attainment area for lead (Pb), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), particulate matter less than 10 microns (PM₁₀), and ozone (O₃) (1 hour standard); unclassifiable for particulate matter less than 2.5 microns (PM_{2.5}) and ozone (O₃) (8 hour standard).

Application Type/Permit Activity:

☒ Initial Issuance

☐ Permit Revision

☐ Administrative

☐ Minor

☐ Significant

☐ Permit Renewal

Compliance Summary:

☒ Compliance certification signed

☐ Compliance schedule included

☐ Source is out of compliance

I. Source Description

1. **Class I Area Impacts:** This source is located within 100 km of a Class I area.
2. **Product Description:** Louisville Gas & Electric- Mill Creek Generating Station generates electric energy for local and remote distribution.
3. **Overall Process Description:** Coal is the primary fuel used to fire commercial boilers for generation of electricity via steam turbines and generators.
4. **Site Determination:** There are no other facilities which are contiguous or adjacent and under common control.
5. **Emission Unit Summary:**

Emission Unit U-1, one utility boiler: Nominal rating of 3085 MMBtu, with emission control devices consisting of an electrostatic precipitator (ESP), a sulfur dioxide removal system (SDRS) for SO₂ removal from the boiler flue gas, and a dry centrifugal dust collector for the coal bunker. Coal is the primary fuel. Natural gas is the secondary fuel.

Emission Unit U-2, one utility boiler: Nominal rating of 3085 MMBtu, with emission control devices consisting of an electrostatic precipitator (ESP), a sulfur dioxide removal system (SDRS) for SO₂ removal from the boiler flue gas, and a dry centrifugal dust collector for the coal bunker. Coal is the primary fuel. Natural gas is the secondary fuel.

Emission Unit U-3, one utility boiler: Nominal rating of 4204 MMBtu, with emission control devices consisting of an electrostatic precipitator (ESP), a sulfur dioxide removal system (SDRS) for SO₂ removal from the boiler flue gas, and a dry centrifugal dust collector for the coal bunker. Coal is the primary fuel. Fuel oil is the secondary fuel. Consideration is being given to natural gas as an alternative secondary fuel.

Emission Unit U-4, one utility boiler: Nominal rating of 5025 MMBtu, with emission control devices consisting of an electrostatic precipitator (ESP), a sulfur dioxide removal system (SDRS) for SO₂ removal from the boiler flue gas, and a dry centrifugal dust collector for the coal bunker. Coal is the primary fuel. Fuel oil is the secondary fuel. Consideration is being given to natural gas as an alternative secondary fuel.

Emission Unit U-5: natural gas fueled auxiliary reheat boiler for Units 1 and 2.

Emission Unit U-6: natural gas fueled auxiliary reheat boiler for Units 3 and 4.

Emission Unit U-7: lime supply silo is no longer used at the plant.

Emission Unit U-8: Sludge processing plant(SPP), consisting of silos, mixers and baghouses and wet centrifugal collectors for control of PM emissions.

Emission Unit U-9: Flyash transfer bin systems with baghouses for control of PM emissions.

Emission Unit U-10: Stage I gasoline fueling station with a 3000 gallon storage tank.

Emission Unit U-11: Non-halogenated cold solvent parts cleaners.

Emission Unit U-12: Limestone processing operation

6. **Fugitive Sources:** Coal loading and unloading, coal conveyance operations, coal pile, gypsum and flyash handling operations.

7. **Title V Major Source Status by Pollutant:**

Pollutant	Actual Emissions (tpy) 2001 Data	Major Source Status (based on PTE)
CO	1,038	Yes
NO _x	17,214	Yes
SO ₂	22,515	Yes
PM	1,349	Yes
VOC	145	Yes
Single HAP > 1 tpy		
Hydrogen Chloride	101	Yes
Hydrogen Floride	2	Yes
Cyanide compounds	5	No
Selenium compounds	1	No
Total HAPs*	114	Yes

8. **MACT Standards:** Louisville Gas & Electric Company is not subject to the requirements of 40 CFR 63, Subpart Q as no chromium-based water treatment chemicals have been introduced into any cooling tower located within the plant boundaries, prior to and after the effective date of Subpart Q, in accordance with LG&E letter, dated June 23, 1998. Only generating Units 2, 3 and 4 have cooling towers.

9. **Applicable Requirements:**

☐ PSD ☒ NSPS ☒ SIP ☐ Other
☐ NSR ☐ NESHAPS ☒ District-Origin ☐ MACT

10. Referenced Federal Regulations in Permit:

40 CFR 60 Subpart A	General Provisions
40 CFR 60 Subpart D	Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971
40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR 60 Subpart Y	Standards of Performance for Coal Preparation Plants
40 CFR 60 Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants
40 CFR Part 72	Permits Regulation
40 CFR Part 73	Sulfur Dioxide Allowance System
40 CFR Part 74	Sulfur Dioxide Opt-ins
40 CFR Part 75	Continuous Emission Monitoring
40 CFR Part 76	Acid Rain Nitrogen Oxides Emission Reduction Program
40 CFR Part 77	Excess Emissions
40 CFR Part 78	Appeals Procedures for Acid Rain Program

II. Regulatory Analysis

- Emission and Operating Caps:** The company has voluntarily limited the combined fuel usage for emission units U-5 and U-6 to 561.6 MM cubic feet of natural gas on a calendar year basis, to avoid PSD requirements.
- Compliance Status:** The source signed and submitted a Title V compliance certification in its permit application.
- Operational Flexibility:** The company requested the option of using different fuels or fuel blends for emission units U-1 through U-4.

4. **Testing Requirements:** The company shall perform PM emissions testing for each of the generating units, U-1 through U-4 annually. The source shall perform weekly Method 9 opacity test for units U-1 through U-4 and weekly opacity surveys for units U-5, U-6, U-8, and U-9.
5. **Monitoring, Recordkeeping and Reporting Requirements:** The source is required to monitor, maintain records of, and report on various operating parameters to demonstrate compliance with all applicable requirements. Compliance reporting is required quarterly for the boilers, and semi-annually for the auxiliary boilers, the sludge processing, the fly ash transfer, and the limestone processing.

The Boilers (U1-U4) periodic monitoring is accomplished by using CEMs for the pollutants NO_x and SO_2 . Periodic monitoring for PM is accomplished by an annual Method 5 stack test, daily monitoring of the ESP and wet scrubber to demonstrate that the control device is operating properly. Periodic monitoring for opacity is accomplished by performing a weekly Method 9, daily monitoring of the ESP and wet scrubber to demonstrate that the control equipment is operating properly, and to correlate the data from the PM stack test with the COM opacity readings to set a trigger level for performing another PM stack test. This monitoring was discussed with EPA in the fall of 2001 and it could be adequate to demonstrate compliance due to the physical limitations at the source. Also, an extractive opacity monitoring system is being tested to see if it is feasible to use in place of the opacity monitoring.

The Auxiliary Reheat Boiler (U5 and U6) periodic monitoring is accomplished by keeping records of the amount of fuel combusted and weekly visual emissions surveys.

The Sludge Processing (U8), Fly Ash Transfer (U9), and Limestone Processing (U12) periodic monitoring is accomplished by weekly visual emissions surveys. The potential PM emissions can not exceed the standards, except for the limestone processing which is required to keep monthly records of the throughput.

The Cold Solvent Parts Cleaners (U11) periodic monitoring is accomplished by keeping records of each purchase.

6. **Off-Permit Documents:** None

The District considers an “off-permit document” as a document on which a source’s compliance with given regulation(s) is contingent or which contains regulatory requirement(s), but is only referenced in a source’s Title V Operating Permit. The designation “off-permit document” shall be made at the District’s discretion, and may include, but not be limited to, documents such as Regulation 1.05 VOC compliance plans, PMPs, MOCS; or other documents which are too voluminous to be included in a source’s Title V Operating Permit, as determined by the District.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary sources.

2. **Short Term Activities:** The source did not report any short term activities.
3. **Compliance Schedule/Progress Reports:** The source has certified compliance with all applicable requirements; therefore, no compliance schedule or progress reports are necessary.
4. **Emissions Trading:** Applicable to Title IV acid rain credits and Title I NO_x allowances..
5. **Acid Rain Requirements:** The source is subject to the Acid Rain Program. The owner or operator shall comply with the acid rain requirements according to 40 CFR Parts 72, 75 and 76 for Group I boilers. Louisville Gas & Electric Company has chosen to meet the early election NO_x requirements for Group I Phase II boilers. The Acid Rain permit, which is attached to the Title V permit, and is going to be reissued at the same time of the Title V in order to make a combined Title V and Title IV permit.
6. **Stratospheric Ozone Protection Requirements:** The source stores refrigerants listed under Title VI of the CAAA in a service garage. The source will comply with the Title VI regulations for recycling and recovery. The District does not have Title VI authority.
7. **Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR 68 Subpart F and Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount. If the source becomes subject to 40 CFR 68 and Regulation 5.15, the source shall comply with the Risk Management Program and Regulation 5.15 and submit a Risk Management Plan to:

RMP Reporting Center
P.O. Box 3346
Merrifield, VA 22116-3346
8. **Insignificant Activities:** The following activities identified in the Title V permit application have been determined by the District to be insignificant.

Insignificant Activities		
Description	Quantity	Basis
Fuel or Lubricating oils storage tanks with vapor pressure <10mm Hg @ 20 deg C	Various	Regulation 2.02, section 2.3.9.2
Storage tanks-diesel or fuel oil-not for sale, resale or distribution-annual turnover <2X capacity	Various	Regulation 2.02, section 2.3.25

Insignificant Activities		
Description	Quantity	Basis
Minor combustion sources <10 MMBtu/hr	Various	Regulation 2.02, section 2.1.1
Internal combustion engines	Various	Regulation 2.02, section 2.2
Brazing, soldering, or welding equipment	Various	Regulation 2.02, section 2.3.4
Emergency relief vents for boiler steam supply	Various	Regulation 2.02, section 2.3.10
Lab exhaust systems	Various	Regulation 2.02, section 2.3.11
Soil or groundwater remediation projects-passive or total removal	Various	Regulation 2.02, section 2.3.20
Portable fuel storage tanks (capacity less than 500 gallons)	Various	Regulation 2.02, section 2.3.23
No.2 fuel oil, secondary fuel (670,000 gallons each) (E-21 and E-22) (installation date 1978)	2	40 CFR60.111a(b) and Regulation 2.02, section 2.3.9.2
Ventilation system (bakeries & restaurants)	1	Regulation 2.02, section 2.3.12
Paved and Unpaved roads	Various	No applicable regulation
Ashpond with wet storage	1	No applicable regulation
Infrequent evaporation of boiler cleaning solutions	Various	No applicable regulation
Infrequent burning of deminimus quantities of used oil for energy recovery	Various	No applicable regulation
Cooling Towers	Various	No applicable regulation
Enclosed sandblasting equipment	Various	No applicable regulation
Landfill	1	No applicable regulation

- A. Insignificant Activities are only those activities or processes falling into the general categories defined in Regulation 2.02, Section 2, and not associated with a specific operation or process for which there is a specific regulation. Equipment associated with a specific operation or process (Emission Unit) shall be listed with the specific process even though there may be no applicable requirements. Information contained in the permit and permit summary shall clearly indicate that those items identified with negligible emissions have no applicable requirements.

- B. Activities identified In Regulation 2.02, Section 2, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source and must be included in the Title V permit.
 - i. No facility, having been designated as an insignificant activity, shall be exempt from any generally applicable requirements which shall include a 20% opacity limit for facilities not otherwise regulated.
 - ii. No periodic monitoring shall be required for facilities designated as insignificant activities.
- C. The Insignificant Activities table is correct as of the date of the permit was proposed for review by the USEPA, Region 4. The company shall submit an updated list of insignificant activities annually with the Title V compliance certification pursuant to District Regulation 2.16, section 4.3.5.3.6.